

ISMATOV, Kh.; CHIZHIKOV, D.M.

Large-scale nitric acid method of treatment of Angren clays,  
resulting in the production of alumina and ammonium nitrate.  
Uzv. khim. shur. no.4:9-16 '60. (MIRA 13:9)

1. Institut metallurgii AN SSSR im. A.A. Baykova. 2. Chlen-korresp.  
AN SSSR (for Chizhikov).  
(Clay) (Alumina) (Ammonium nitrate)

S/509/60/000/004/005/024  
E021/E106

AUTHORS: Tsvetkov, Yu.V., and Chizhikov, D.M.  
TITLE: The Kinetics of the Joint Reduction of Lead and Zinc  
Oxides by Carbon Monoxide  
PERIODICAL: Akademiya nauk SSSR. Institut metallurgii.  
Trudy, No.4, 1960. Metallurgiya, metallovedeniye,  
fiziko-chimicheskiye metody issledovaniya, pp. 84-88  
TEXT: Experiments were carried out by means of methods  
reported previously (Refs 1-3), on the reduction of the oxides  
separately, using a vacuum apparatus with continuous circulation  
of gases and freezing the carbon dioxide formed in the process.  
The final products of the experiments were subjected to phase  
analysis, with the assistance of B.Ya. Tratshevitskaya.  
Molar mixtures of oxides in the following ratios were used:  
PbO:ZnO 1:6, 1:3, 1:1 and 3:1. Experiments were carried out  
with pressures of carbon monoxide of 25 and 100 mm mercury and  
temperatures of 600, 700 and 800 °C. Preliminary experiments had  
shown that no compounds were formed in this region. A small  
addition of lead oxide had no marked effect on the kinetics of the  
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S/509/60/000/004/005/024  
E021/E106

The Kinetics of the Joint Reduction of Lead and Zinc Oxides by Carbon Monoxide

reduction of zinc oxide. As the lead oxide content increased, the reduction of zinc oxide was retarded. This effect was less marked at higher temperatures, with higher carbon monoxide pressure and with greater degree of reduction of lead oxide in the mixture. The reason for the observed phenomenon was thought to be a local increase in concentration of carbon dioxide formed during the reduction of lead oxide. The carbon dioxide was adsorbed on the active centres of the zinc oxide surface, preventing adsorption of the reducing gas and thus retarding the process. At 800 °C, the volatility of metallic lead during reduction of the mixture was higher than that observed during reduction of the separate oxide. The volatility increased with increase in relative content of zinc oxide in the mixture. There are 4 figures, 1 table and 4 Soviet references.

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S/598/60/000/004/017/020  
D217/D302

AUTHORS: Zviadadze, G.N. and Chizhikov, D.M.  
TITLE: Study of cathode polarization in NaCl-KCl-TiCl<sub>3</sub> melts  
SOURCE: Akademiya nauk SSSR. Institut metallurgii. Titan i yego  
splavy. No. 4, Moscow, 1960. Metallurgiya titana, 153-157

TEXT: The polarization during electrolysis of a solution of TiCl<sub>3</sub> in an equimolecular solution of NaCl and KCl was determined by plotting I-V curves. The purpose of this work was to study the polarization for those cathode current densities within the limit of which electrolysis in titanium chloride melts is carried out in laboratory and industrial vats. The apparatus for plotting I-V curves is shown in Fig. 1. The cell for taking measurements was placed in a steel container with a water-cooled flange and lid. A mixture of NaCl and KCl was melted and a vapor-gas mixture of TiCl<sub>4</sub> and argon was introduced into the cell containing the melt, on the bottom of which a weighed quantity of Ti

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S/598/60/000/004/017/020  
D217/D302

Study of cathode ..

powder had been placed. After adding the required weight of  $\text{TiCl}_4$ , the thermocouple and sheath were removed from the container and some of the melt was sucked into an opening in the porcelain tube, where it froze, and was removed for analysis. During this period, excess argon was supplied to the container in order to ensure better protection of the metal against oxidation. After preparing the melt, electrodes were lowered into the cell, connected up, and measurements were started. The accumulator voltage was supplied to the commutator terminals, and from there, through a rheostat and a potentiometer to the electrodes. After the measurements were completed, the melts were re-analyzed to estimate the change in composition occurring within the period of experiment. The temperature in the furnace was kept constant by the potentiometer. The geometrical dimensions of cathode and anode and their ratio in the cell used, corresponded to the cathode polarization study. A molybdenum wire of 1.6 cm diameter was used as the cathode; this was placed along the vertical axis inside a graphite cylinder of 7.3 cm diameter and 19 cm length, which was made the anode. The ratio

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D217/D302

Study of cathode ...

between anode and cathode surface area was 137. Owing to the insignificantly low anodic current density, the anode behaved as a virtually non-polarizing electrode, and it was, therefore, used as a reference electrode. The electrodes were separated by means of a bung having an opening at the bottom and being concentrically placed between the anode and the cathode. Measurements were carried out at 730° and 830° C, these being the most characteristic temperatures for the electrolysis of sodium, potassium and titanium chloride solutions. The concentration of lower-valency Ti in the melt did not exceed 3-4 wt.%. It was found that the potential, extrapolated to zero current density, decreased with increasing temperature. The influence of the lowest valency Ti, particularly at 830°, is insignificant. It is suggested that discharge of Ti ions and alkali metal occurs alternately during electrolysis at the cathode current densities investigated. There are 3 figures, 2 tables and 1 Soviet-bloc reference.

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S/598/60/000/004/017/020  
D217/0302

Study of cathode ...

Layout of apparatus for plotting I-V curves:  
1 - cell; 2 - hermetic steel container; 3 - cathode; 4 - anode wire;  
5 - diaphragm; 6 - tube for supplying the tetrachloride; 7 - container  
with tetrachloride; 8 - oil bath; 9 - furnaces for the purification of  
argon; 10 - galvanometer; 11 - argon bomb; 12 - furnace; 13 - accumula-  
tor; 14 - key; 15 - rheostat; 16 - ammeter; 17 - voltmeter.

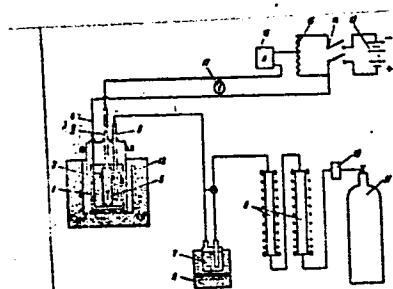


Рис. 1. Схема прибора для измерения I-V характеристик.  
1 - ячейка; 2 - герметичный стальной контейнер; 3 - катод; 4 - анодная проволока; 5 - диафрагма;  
6 - трубка для подачи тетрахлорида; 7 - сосуд с тетрахлоридом; 8 - масляная баня; 9 - печи  
для очистки аргона; 10 - гальванометр; 11 - бомба с аргонem; 12 - печь; 13 - аккумулятор;  
14 - ключ; 15 - реостат; 16 - амперметр; 17 - вольтметр.

Card 4/4

ZVIADADZE, G.N.; KARTAZINA, I.N.; CHIZHIKOV, D.M.

Studying the cyclic electrolytic recovery of titanium from its  
tetrachloride. Titan i ego splavy no.4:184-190 '60.

(MIRA 13:11)

(Titanium--Electrometallurgy)

CHIZHIKOV, D.M.; EDEL'SHTEYN, V.M.

Distribution coefficient of tin in selenium. Fiz. tver. tela 2  
no.5:863-865 My '60. (MIRA 13:10)

1. Institut metallurgii im. A.A.Baykova An SSSR, Moskva.  
(Selenium) (Tin)

81646

S/181/60/002/06/35/050  
B006/B056

5.4110  
AUTHORS:

Chizhikov, D. M., Schastlivyy, V. P.

TITLE:

The Phase Diagram and the Magnetic Susceptibility of  
Ferro-calcium Silicates <sup>21</sup>

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 6, pp. 1264 - 1268

TEXT: Within the framework of the investigations of the physicochemical properties of oxide melts, which are everywhere carried out, investigations of slag systems are of special interest. It is a well-known fact that the magnetic susceptibility depends solely on the structure of the electron shells of atoms or ions; the authors made the attempt to find a connection between susceptibility and the phase variations in melts. For this purpose they investigated the magnetic susceptibility of pseudo-ternary oxide melts ( $\text{FeO} - \text{SiO}_2 - \text{CaO}$ ) in connection with the phase diagram. The investigations were carried out within the temperature range of from  $700^\circ\text{C}$  to  $1400^\circ\text{C}$  in fields of 4000 oe and by means of an arrangement which is schematically shown in Fig. 1. This arrangement is

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The Phase Diagram and the Magnetic Susceptibility of Ferro-calcium Silicates S/181/60/002/06/35/050  
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described in detail in the introduction. The samples investigated had a weight of 6 - 8 g. Fig. 2 shows the change of  $dH/dx$  with the height of the suspension of the weighed-in portion in the crucible. The magnetic susceptibility was calculated from the formula  $\chi = f/(mH \frac{dH}{dx})$ , where  $m$  denotes the weighed-in portion in g,  $H$  - the magnetic field in oersteds,  $f$  - the difference in weight of the sample inside and outside the magnetic field (the change in weight amounted to about 0.01 - 0.50 g). The samples investigated had a constant ratio  $SiO_2/FeO = 0.9$  or a constant silicon content. Fig. 3 shows the temperature dependence of the susceptibility of  $FeO-SiO_2-CaO$ . The courses taken by the curves show that oxide melts are paramagnetic within the range above the Curie point (700 - 800°C). With rising temperature the absolute value of susceptibility drops somewhat.  $\chi$  also depends on the concentration of calcium oxide; Fig. 4 shows the corresponding curves (at 800°C and 1200°C). They have two peaks at 10 and 19%  $CaO$ . Fig. 5 shows the phase diagram; the points corresponding to these maxima on the phase diagram coincide with the points of the transition of the melts from one into another region of the phase

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The Phase Diagram and the Magnetic Susceptibility of Ferro-calcium Silicates

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composition. Fig. 6 shows the temperature dependence of  $\chi$  at a constant silicon content (48.0%  $\text{SiO}_2$ ) for six different FeO/CaO ratios, and Fig. 7 shows the dependence of  $\chi$  on the CaO content at a constant silicon oxide concentration. The value of  $\chi$  was found to be immediately connected with the FeO content of the sample. There are 7 figures, 2 tables, and 10 references: 8 Soviet and 1 British.

ASSOCIATION: Institut metallurgii im. A. A. Baykova AN SSSR Moskva  
(Institute of Metallurgy imeni A. A. Baykov of the AS USSR,  
Moscow)

SUBMITTED: November 17, 1958

X

Card 3/3

S/136/60/000/012/004/010  
E193/E183

AUTHORS: Chizhikov, D.M., Zviadadze, G.N., and Korsunskaya, V.N.

TITLE: Reaction Between Titanium Tetrachloride and Titanium Dioxide in the Presence of Carbon

PERIODICAL: Tsvetnyye metally, 1960, No. 12, pp. 42-46

TEXT: The basic reaction in the chlorine process, which is increasingly used in the production of titanium, is:

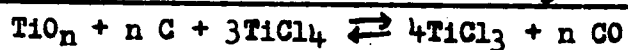
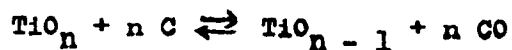
$$\text{TiO}_2 + 2\text{Cl}_2 + \text{C} \rightarrow \text{TiCl}_4_{\text{gas}} + \text{CO}(\text{CO}_2).$$

Whatever modification of the process is employed, secondary reactions take place between titanium tetrachloride and metallic oxide. Rational control of the process is not possible without proper understanding of these reactions, one of which was the object of the present investigation. The experiments consisted in heating a  $\text{TiO}_2$ -C powder compact in a stream of titanium tetrachloride, mixed in various proportions with dry argon. It was established that under these conditions titanium trichloride and carbon monoxide are formed. The formation of titanium chloride begins at 900 °C and its rate increases with rising

S/136/60/000/012/004/010  
E193/E183

Reaction Between Titanium Tetrachloride and Titanium Dioxide in the Presence of Carbon

temperature. The process can be intensified by increasing the partial pressure of titanium tetrachloride in the  $TiCl_4$ -A mixture up to 300 mm Hg; further increase in the partial pressure of  $TiCl_4$  brings about only a small increase in the yield of  $TiCl_3$ . Maximum yield of this compound is obtained when titanium dioxide and carbon are present in equal molar proportions. It was inferred from the experimental data on the kinetics of the process studied, that it constitutes a multi-stage reaction which can be represented by:



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S/136/60/000/012/004/010  
E193/E183

**Reaction Between Titanium Tetrachloride and Titanium Dioxide in the Presence of Carbon**

The results of the present investigation indicate that when the chlorine process is used for treatment of titanium-bearing materials,  $TiCl_3$ , formed as a result of the secondary reactions, may reduce the yield of titanium tetrachloride. The presence of  $TiCl_3$  in gases leaving the chlorinator may cause complications during subsequent condensation. When chlorine is made to react with molten material, losses of titanium and chlorine may occur as a result of dissolution of  $TiCl_3$  in  $TiCl_4$ . On the other hand, the results of the present investigation may provide a basis of a process for production of titanium trichloride which, by itself, is a valuable material.

There are 6 figures and 2 tables.

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CHIZHIKOV, D.M.; SCHASTLIVYY, V.P. (Moscow)

Interrelation between the electric conductivity and the phase  
diagrams of fused oxides. Zhur. fiz. khim. 34 no.3:572-576 Mr  
'60. (MIRA 13:11)

(Oxides--Electric properties)  
(Systems (Chemistry))

CHIZHIKOV, D.M.; RABINOVICH, B.N.

Formation of tantalum iodides and tantalum obtained from its  
iodided. Dokl.AN SSSR 134 no.2:368-370 S '60. (MIRA 13:9)

1. Institut metallurgii im. I.A. Baykova Akademii nauk SSSR.
2. Chlen-korrespondent AN SSSR (for Chizhikov).  
(Tantalum iodide) (Tantalum)

S/137/62/000/003/007/191  
A006/A101

AUTHORS: Chizhikov, D. M., Gvelesiani, G. G., Konyshkova, T. Ye.

TITLE: Reduction kinetics of zinc, copper and lead ferrites with carbon monoxide

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 3, 1962, 15, abstract 3A79  
(V sb. "Fiz.-khim. osnovy proiz-va stali", Moscow, AN SSSR, 1961, 185-186)

TEXT: The substances were prepared synthetically by reaction in the solid phase. The completeness of ferrite formation was controlled by chemical and X-ray analyses. During the reduction of mechanical mixtures of Zn, Cu and Pb oxides with Fe oxide, the regularities which are characteristic of pure oxides, were maintained only until a definite temperature limit. A comparison of kinetic data on the reduction of Zn, Cu and Pb ferrites with data on the reduction of structurally free oxides, has shown that the binding of ZnO and CuO into ferrites inhibits their reduction, but that of PbO accelerates it. Probable variants of the mechanism of Zn and Cu ferrite reduction, are proposed.

T. Kolesnikova

[Abstracter's note: Complete translation]

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BEREZKINA, L.G. (MOSKVA); TSVETKOV, Yu.V. (Moskva); CHIZHIKOV, D.M. (Moskva)

Kinetics of the reduction of free lead oxide and of lead oxide  
by means of carbon monoxide. Izv. AN SSSR. Otd. tekhn. nauk.  
Met. i topl. no. 2:49-54 Mr-Apr '61. (MIRA 14:4)  
(Lead--Metallurgy)

GULYANITSKAYA, Z.F. (Moskva); PETROVA, R.N. (Moskva); CHIZHIKOV, D.M. (Moskva)

Heat content of melts in the system ferrous oxide - zinc oxide -  
silica. Izv. AN. SSSR. Otd. tekhn. nauk. Met. 1 topl. no. 2:55-  
59 Mr-Ap '61. (MIRA 14:4)

(Slag—Thermal properties)

CHIZHIKOV, D.M.; TSVETKOV, Yu.V.; BEREZKINA, L.G.

Effect of the crystal structure of a substance on its reduction  
kinetics. Kin. i kat. 2 no.1:50-54 Ja-F '61. (MIRA 14:3)

1. Institut metallurgii imeni A.A. Baykova, AN SSSR.  
(Reduction, Chemical)  
(Chemical reaction, Rate of)

S/180/61/000/005/003/018  
E071/E435

AUTHORS: Li Hsi-Ch'ang, Chizhikov, D.M. (Moscow)  
TITLE: On the stability of titanium dichloride in melts and  
the state diagram of the system potassium chloride-  
titanium dichloride

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye  
tekhnicheskikh nauk. Metallurgiya i toplivo, no.5,  
1961, 22-27

TEXT: In view of the application of the electrolytic method of  
production and refining of metallic titanium, the knowledge of the  
physico-chemical properties of molten alkali and alkali earth  
chlorides containing lower titanium chlorides is of theoretical  
and practical importance. It was previously established by a  
thermographic analysis of the  $\text{TiCl}_2\text{-KCl}$  system fused in an iron  
crucible that two compounds  $\text{K}_2\text{TiCl}_4$  and  $\text{KTiCl}_3$  exist and also  
two eutectics: one, at  $730^\circ\text{C}$ , containing 62 mole % of  $\text{TiCl}_2$  and  
one, at  $632^\circ\text{C}$ , containing 27 mole % of  $\text{TiCl}_2$  (Ref.1: Von Ehrlich  
Paul, Kuhn1 Hubert. Z. anorgan. und allgem. Chem., 1957, Bd.292,  
Hf. 1-3, S. 146-150). There is no agreement on the behaviour of  
 $\text{TiCl}_2$  in melts. Some authors consider that the decomposition of  
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S/180/61/000/005/003/018  
E071/3435

On the stability of titanium ...

TiCl<sub>2</sub> in melts takes place according to  $2\text{TiCl}_2 \rightleftharpoons \text{Ti} + \text{TiCl}_4$ , others consider that this occurs according to  $3\text{TiCl}_2 \rightleftharpoons \text{Ti} + 2\text{TiCl}_3$ . In the present work the authors investigated the stability of TiCl<sub>2</sub> in molten sodium and potassium chlorides at 700 to 800°C and the change of the composition of melts on cooling from 970 to 500°C in crucibles made from iron, titanium and graphite. The method of preparation of titanium dichloride and the experimental procedure and apparatus used are described in some detail. It was established that in titanium crucibles the ratio of

$$\frac{\text{Ti}^{2+}}{\text{Ti}^{2+} + \text{Ti}^{3+}} \cdot 100\%$$

amounted to 94.5 to 100%; in iron crucibles this ratio equals 43.6 to 52.8%; in silica, 22 to 30.5%; in graphite crucibles placed in titanium envelopes, 76.5 and 82.1% and in graphite crucibles placed in iron envelopes, 25.0 and 12.2%. Therefore, the thermographic investigations of systems of alkali chlorides containing TiCl<sub>2</sub> should be carried out in titanium crucibles,  
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S/180/61/000/005/003/018  
EO71/E435

On the stability of titanium ...

securing the maximum stability of the melts. Crucibles from other materials are inapplicable for this purpose. In absence of metallic titanium, the decomposition of  $TiCl_2$  takes place rapidly according to the reaction  $3TiCl_2 \rightarrow 2TiCl_3 + Ti$ , which is confirmed by the presence in the melts, after the experiments, of metallic titanium, causing blackening of the melts and turbidity of their solutions. A thermographic analysis of the system  $KCl-TiCl_2$  in the range up to 30 mole % of  $TiCl_2$  was carried out in titanium crucibles. The weight of the charge was 20 to 26 g, rate of cooling 3 to 4°C per minute. It was established that in the range investigated there exists a eutectic corresponding to 16.2 mole % of  $TiCl_2$  and 83.8 mole % of  $KCl$  and with a melting temperature of 650°C and a chemical compound  $K_3TiCl_5$  with a melting temperature of 766°C. The results obtained differ substantially from the data in the above-quoted reference. There are 4 figures, 6 tables and 10 references: 4 Soviet and 6 non-Soviet. The four most recent references to English language publications read as follows: Ref.2: Komarek K. and Herasymenko P. J.Electrochem. Soc., 1958, v.105, no.4, 210-219; Ref.4: Kroll W.J., Titanium. Metal Ind., 1955, v.87, no.4, 63;

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On the stability of titanium ...

S/180/61/000/005/003/018

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Ref.5: Mellgren S. and Opie W. J. Metals, 1957, v.9, no.2, 266-269;  
Ref.6: Kreye W.C. and Kellogg H.H., J. Electrochem. Soc., 1957,  
v.104, no.8, 504-508.

SUBMITTED: January 10, 1961

Card 4/4

GULMANITSKAYA, Z.F. (Moskva); PETROVA, R.N. (Moskva); CHIZHIKOV, D.M. (Moskva)

Heat content of alloys in the system calcium oxide - ferrous oxide -  
zinc oxide - silica. Izv.AN SSSR.Otd.tekh.nauk.Met.1 topl.  
no.5:31-35 S-O '61. (MIRA 14:10)

(Silicon-iron alloys--Thermal properties)

CHIZHIKOV, D.M. (Moskva); GULYANITSKAYA, Z.F. (Moskva); PETROVA, R.N.  
(Moskva)

Heat content, temperature and heat conductivity of alloys of  
the system calcium oxide - iron oxide - zinc oxide - alumina -  
silica. Izv. AN SSSR. Otd. tekhn. nauk. Met. i topl. no.6:37-41  
N-D '61. (MIRA 14:12)

(Iron-silicon-zinc alloys—Thermal properties)

BOCHVAR, A.A.; BELYAYEV, A.I.; PAVLOV, I.M.; PLAKSIN, I.N.; CHIZHIKOV,  
D.M.; PERLIN, I.L.

Petr Stepanovich Istomin; on his 80th birthday. Izv. vys. ucheb.  
zav.; tsvet. met. 4 no.4:161-163 '61. (MIRA 14:8)  
(Istomin, Petr Stepanovich, 1881-)

CHIZHIKOV, D.M.; DEYNEKA, S.S.

Surface tension and density of zinc containing silicate melts.  
Dokl.AN SSSR 138 no.6:1402-1404, Je '61. (MIRA 14:6)

1. Institut metallurgii im. A.A.Baykova AN SSSR. 2. Chlen-korrespondent  
AN SSSR (for Chishikov).  
(Silicates) (Surface tension)

Chizhikov, David Mikhaylovich

Kadmiy. Moskva, Izd-vo Akademii Nauk SSSR, 1962.

227 p. graphs, tables.

At head of title: Akademiya Nauk SSSR. Institut Metallurgii, and Russia.  
Gosudarstvennyy Komitet po Chernoy i Tsvetnoy Metallurgii.

Bibliography: p. 218-(226)

CHIZHIKOV, David Mikhaylovich; FRENTS, Galina Sergeyevna; TRATSEVITSKAYA,  
Betti Yakovlevna; CHERNOV, A.N., red.izd-va; RYLINA, Yu.V.,  
tekhn.red.

[Chlorination process for the metallurgy of tin] Khloridnaia  
metallurgiiia olova. Moskva, Izd-vo Akad.nauk SSSR, 1962. 114 p.  
(MIRA 15:5)

1. Chlen-korrespondent AN SSSR (for Chishikov).  
(Tin—Metallurgy) (Chlorination)

CHIZHIKOV, David Mikhaylovich; GULYANITSKAYA, Zoya Feodos'yevna;  
GUROVICH, Natal'ya Aleksandrovna; KITLER, Igor' Nikolayevich;  
KREYNGAUZ, Bella Pavlovna; NOVOSELOVA, Valentina Nikolayevna;  
PLIGINSKAYA, Lyubov' Vladimirovna; USTINOVSKIY, Boris  
Zinov'yevich; KLIMOV, V.A., red. izd-va; LAUT, V.G., tekhn. red.

[Hydro- and electrometallurgy of sulfide alloys and mattes]  
Gidroelektrometallurgiya sul'fidnykh splavov i shteynov. Mo-  
skva, Izd-vo Akad. nauk SSSR, 1962. 204 p. (MIRA 15:9)

1. Chlen-korrespondent Akademii nauk SSSR (for Chizhikov).  
(Sulfides--Metallurgy) (Hydrometallurgy)  
(Electrometallurgy)

CHIZHIKOV, David Mikhaylovich; CHERNOV, A.N., red.; GUS'KOVA, O.M.,  
tekh. red.

[Cadmium]Kadmi. Moskva, Izd-vo Akad. nauk SSSR, 1962. 227 p.  
(MIRA 15:12)  
(Cadmium)

S/080/62/035/002/004/022  
D204/D302

AUTHORS: Chizhikov, D. M., Rabinovich, B. N., Subbotin, Ye. A.  
and Korsunskaya, V. N.

TITLE: Separation of fluorine from the rare earths in solutions also containing Ca and Si, by an ion exchange method

PERIODICAL: Zhurnal prikladnoy khimii, v. 35, no.2, 1962, 276-280

TEXT: The aim of the present work was to obtain pure lanthanon oxides  $M_2O_3$  from natural and synthetic solutions containing Ca and Si. Experimental solutions contained 2 - 3  $\sum M_2O_3$ , 3 - 12.8 Ca, 0.45 - 1.6 Fe, 0.4 - 0.8 F and 0.5 - 0.75 g/l of Si, in HCl. The natural solutions, in 5% HCl, contained admixtures of Ca, Ba, Fe, Si, Al, Ti and F. Separations were effected on the  $\gamma K-2$  (UK-2) cationite (sulphonic acid type, in the H-form). The rare earths were adsorbed quantitatively, while the filtrate leaving the column contained all F and Si, as well as 75 - 80% of the original Ca and

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Separation of fluorine ...

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D204/D302

85 - 95% of the Fe. The lanthanons were then desorbed with 4N HCl. further purification was by the usual oxalate method. The pure oxides contained  $< 0.1\%$  Ca and a few parts of Fe, Si and Al per  $10^4$ . The dependences of adsorption and desorption of the rare earths on the HCl concentration and rates of elution were investigated, as well as the adsorption capacity of the resin under static and dynamic conditions. It was found that the adsorption increased sharply with decreasing acid concentration, reaching a maximum in 0.4N HCl. This was confirmed by the fall in the static adsorption capacity of UK-2 from  $\sim 130$  mg in 1.5N HCl to  $\sim 0.01 - 0.09$  mg  $\sum M_2O_3/g$  of UK-2 in 0.4N HCl. The adsorption and desorption processes were fully reversible. Adsorption capacity increased markedly when the solutions were passed through the column slowly, but increased rates of flow shortened appreciably the time of elution. The results are briefly discussed. There are 5 figures, 1 table and 4 references: 1 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows: O. Samuelson, R. Djurfeldt and A. Scholander, Elementa, 30, 107, (1947); W. Funasaka,

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Separation of fluorine ...

S/080/62/035/002/004/022  
D204/D302

M. Kawane and T. Kojima, Met. Fac. Eng., Kyoto Univ., 18, 1, 44-50 (1956).

SUBMITTED: July 1, 1960

✓

Card 3/3

CHIZHIKOV, D.M.; KONYSHKOVA, T.Ye.

Kinetics of lead ferrite reduction by carbon monoxide.  
Dokl. AN SSSR 142 no.6:1346-1349 F "62. (MIRA 15:2)

1. Institut metallurgii im. A.A. Baykova AN SSSR. 2. Chlen-  
korrespondent AN SSSR (for Chizhikov).  
(Lead ferrate)  
(Carbon monoxide)

CHIZHIKOV, D.M.; DEYNEKA, S.S.

Interaction between cuprous sulfide and zinc-containing  
silicate melts. Dokl. AN SSSR 143 no.2:388-390 Mr '62.  
(MIRA 15:3)

1. Chlen-korrespondent AN SSSR (for Chizhikov).  
(Copper sulfides)  
(Silicates)

35524  
S/020/62/143/003/027/029  
B101/B144

18.1290

AUTHORS: Chizhikov, D. M., Corresponding Member AS USSR, Tsvetkov, Yu. V., and Edel'shteyn, V. M.

TITLE: The liquid-vapor equilibrium of high-boiling mixtures at pressures deviating from the atmospheric with the cadmium-zinc system as example

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 143, no. 3, 1962, 655 - 657

TEXT: An experimental determination of the liquid-vapor equilibrium in autoclaves was carried out with internal heating. The apparatus was evacuated, filled with inert gas, and a certain constant pressure maintained. Two series of experiments were carried out: (a) determination of the dependence of the b.p. on the composition of the Cd-Zn alloy (0-100% Cd) and the pressure (100 - 3800 mm Hg); (b) determination of the effect of pressure on the composition of the vapor in the case of recirculation of the condensed vapor. In the series (a) the alloys were heated in graphite crucibles and the temperature recorded with an ЭПП-09 (EPP-09) recording electronic potentiometer. For the second series an equilibrium apparatus

Card 1/2

BEREZKINA, L.G.; CHIZHIKOV, D.M.

X-ray diffraction study of compounds in the  $PbO - SiO_2$  system.  
Zhur.neorg.khim. 7 no.4:856-859 Ap '62. (MIRA 15:4)  
(Lead silicates) (X rays--Diffraction)

S/828/62/000/000/008/017  
E039/E420

AUTHORS: Subbotina, Ye.A., Chizhikov, D.M., Al'tshuler, O.V.  
TITLE: The separation of the chlorides of titanium, niobium  
and tantalum by the ion exchange method  
SOURCE: Razdeleniye blizkikh po svoystvam redkikh metallov.  
Mezhvuz. konfer. po metodam razdel. blizkikh po svoyst.  
red. metallov. Moscow, Metallurgizdat, 1962, 98-106

TEXT: Continuing previous work on this subject a scheme for the separation of Nb and Ta in their complex ions is developed using anion exchange resins ЭДЭ-10 (EDE-10) and АН-2Ф (AN-2F). Nb and Ti are separated by dissolving their chlorides in concentrated HCl solution and passing through a column filled with anion exchange resin on which both metals are adsorbed. The column is then washed with 6 to 8 N HCl which removes nearly all the Ti. After further washing with 2 to 3 N HCl all the Ti is removed and about 60% of the Nb remains on the resin. This is removed by washing in dilute HCl containing 3 to 5 g/litre of Na. The Nb<sub>2</sub>O<sub>5</sub> precipitated from the final fraction contains < 0.1% Ti. A method is proposed for separating Nb and Ti and other elements  
Card 1/2

The separation of the chlorides ...

S/828/62/000/000/008/017

EO39/E420

from Ta, again based on the formation of complex anions in HCl solution and makes use of the different adsorption mechanism of the impurities on the resin compared with Ta. All the impurities form well adsorbed complex anions (Nb, Ti, Fe etc) and are completely adsorbed in the column while the Ta passes through. Ta with no Ti and Nb < 0.01% can be obtained in this way. The existence of cations, anions and neutral complexes of Ti, Nb and Ta is determined but their composition is not known. In a 0.4 to 12N HCl solution there are not less than three forms of Ti (cation, anionic complex and neutral complex); not less than two forms of Nb (anionic complex and neutral complex) and not less than three forms of Ta (cation, anionic complex and undissociated molecules). The coefficient of self diffusion of Nb and Ta in HCl solution is determined and the equilibria and kinetics of cation and anion adsorption is studied. There are 8 figures.

Card 2/2

L 8147-66 EWT(m)/EWP(b)/EWP(t) IJP(c) JB/JG

ACC NR: AP5027209

SOURCE CODE: UR/0078/65/010/011/2527/2534

AUTHOR: Chizhikov, D. M.; Rabinovich, B. N.; Subbotina, Ye. A.

ORG: None

TITLE: Thermal decomposition of cerium, neodymium, and gadolinium nitrates

SOURCE: Zhurnal neorganicheskoy khimii, v. 10, no. 11, 1965, 2527-2534

TOPIC TAGS: nitrate, cerium compound, neodymium compound, gadolinium compound, thermal decomposition

ABSTRACT: The article describes the use of chemical, thermographic, x-ray, and magnetometric methods of analysis to study the thermal decomposition of cerium, neodymium, and gadolinium nitrates in air and to determine the nature of the gases formed as a result of the decomposition. The rare earth content in the nitrate was determined by the weight method, and the nitrogen by the Devarda method. The molecular formula of the compound was calculated from the experimental data and the thermographic analysis was done with a Kurnakov pyrometer. X-ray analysis was done by the powder method and the magnetic susceptibility was determined by the Gouy method. Results indicate that the process of dehydration of cerium nitrate takes place in the temperature

Cord 1/2

UDC: 546.662'175+546.655'175+546.657'175

L 8147-66

ACC NR: AP5027209

interval 75-130 C, that of neodymium in two stages at 80-150 and 150-300 C, and that of gadolinium nitrate within the temperature limits of 100-300 C. Formation of oxides during the thermal decomposition of the nitrates is observed for cerium nitrate at 170 C, for neodymium nitrate at 300 C, and for gadolinium nitrate at 400 C. Orig. art. has: 10 figures and 7 tables.

SUB CODE: GC, IC/ SUBM DATE: 16Apr64/ ORIG REF: 002/ OTH REF: 005

jw

Cord 2/2

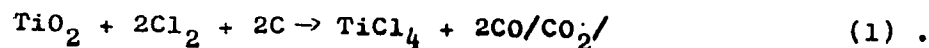
S/180/62/000/005/002/011  
E193/E383

AUTHORS: Chizhikov, D.M. and Korsunskaya, V.N. (Moscow)

TITLE: Concerning the problem of chlorinating titanium-bearing materials

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Metallurgiya i toplivo, no. 5, 1962, 74 - 80.

TEXT: The chlorination process is the basis of modern methods of extraction of titanium. The efficiency of the process depends on how complete is the reaction:



Optimum results are obtained when all the  $\text{TiO}_2$  is converted to  $\text{TiCl}_4$ , i.e. when no secondary reactions occur which might lead to the formation of lower titanium chlorides. The object of the present investigation was to determine the extent to which these secondary reactions depend on the composition of the solid charge and the gaseous mixture. To this end, the authors studied the  
Card 1/4

Concerning the problem ....

S/180/62/000/005/002/011  
E193/E383

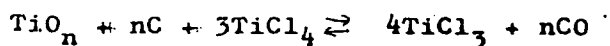
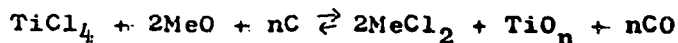
reactions between titanium tetrachloride and titanium, iron, calcium, manganese, aluminium and silicon oxides at various temperatures and determined the effect of the carbon content of the charge and chlorine concentration in the gaseous mixture on the course of the chlorination process and on the reaction products. The experiments were conducted on small (1.5 g) samples of each oxide, both taken singly and mixed in various combinations with and without carbon additions. Tests on industrial slags containing all the five oxides studied were also conducted. The test temperatures ranged from 600 - 1 100 °C. An argon/TiCl<sub>4</sub> mixture with a TiCl<sub>4</sub> partial pressure of 320 mm Hg was used in the experiments; when chlorine was added to the mixture its partial pressure ranged from 30 - 160 mm Hg. The results can be summarized as follows. 1) TiCl<sub>4</sub> enters into an exchange reaction with all the oxides studied, as a result of which TiO<sub>2</sub> and a chloride of the appropriate metal are formed. 2) In the presence of carbon a reaction between TiCl<sub>4</sub> and metal oxides takes place, leading to the formation of metal chlorides and TiCl<sub>3</sub>. The latter

Card 2/4

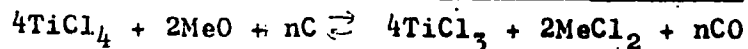
Concerning the problem ....

S/180/62/000/005/002/011  
E193/E383

compound is formed as a result of a complex process which can be described by the following equations:



(4) . .



3) The undesirable formation of  $\text{TiCl}_3$  is inhibited when the gaseous mixture contains chlorine. The effect of various factors on the quantity of  $\text{TiCl}_3$  formed in the slag (79.9%  $\text{TiO}_2$ , 2.2%  $\text{Fe}_2\text{O}_3$ , 4.85%  $\text{SiO}_2$ , 6.8%  $\text{Al}_2\text{O}_3$ , 1%  $\text{CaO}$ , 6.15%  $\text{MgO}$ )- $\text{TiCl}_4$ -C- $\text{Cl}_2$  is demonstrated in Fig. 4; in graph a the  $\text{TiCl}_3$  yield (%) is plotted against the partial pressure of  $\text{Cl}_2$  ( $p_{\text{Cl}_2}$ , mm Hg) in the gaseous mixture, curves 1, 2 and 3 relating to test Card 3/4

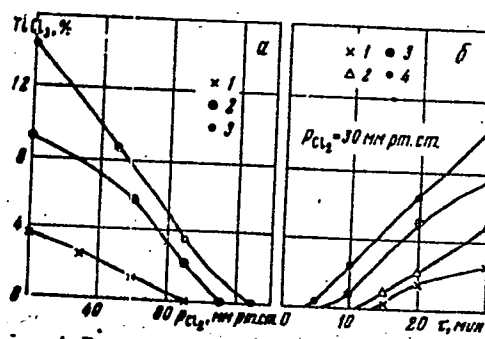
Concerning the problem ....

S/180/62/000/005/002/011  
E193/E383

temperatures of 1 000, 1 100 and 1 200 °C; in graph 5 the  $TiCl_3$  yield in experiments conducted at a partial pressure of chlorine of 30 mm Hg is plotted against the reaction time ( $\tau$ , min), curves 1-4 relating to test temperatures of 1 000, 1 050, 1 100 and 1 200 °C. It will be seen that under certain conditions the formation of  $TiCl_3$  can be entirely suppressed. There are 4 figures and 6 tables.

SUBMITTED: December 6, 1961

Fig. 4:



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S/826/62/000/000/006/007  
D408/D307

AUTHORS: Budnevskiy, A.M., Li Hsi-ch'ang, Chizhikov, D.M.  
and Zviadadze, G.N.

TITLE: Special features of the behavior of molten titanium  
dichloride and its role during electrolysis

SOURCE: Fizicheskaya khimiya rasplavlennykh soley i shlakov;  
trudy Vses. soveshch. po fiz. khimii raspl. soley  
i shlakov, 22 - 25 noyabrya 1960 g. Moscow. Metall-  
urgizdat, 1962, 344 - 352

TEXT: The properties of KCl-NaCl melts containing  $TiCl_2$ ,  
their stability in the presence of quartz, graphite, Fe and Ti and  
their behavior during electrolysis were studied, since such melts  
facilitate the production of large Ti crystals.  $TiCl_2$  was prepared  
in an apparatus consisting mainly of a quartz tube divided into two  
chambers by a perforated plate, the upper chamber being heated to  
1050 - 1070°C and the lower to 800°C. Argon and  $TiCl_4$  were introduced  
into the upper chamber which contained compressed Ti shavings. The

Card 1/3

Special features ...

S/826/62/000/000/006/007  
D408/D307

produced molten  $\text{TiCl}_2$  passed through the perforated plate and was collected in a graphite beaker in which it solidified. Analysis showed that the  $\text{TiCl}_2$  was free from trichloride. Stability of the melts was investigated in crucibles made from the test materials, finding that it was least in quartz and greatest in Ti crucibles. A portion of the  $\text{KCl-TiCl}_2$  system (up to 20 mol%  $\text{TiCl}_2$ ) was thermographically investigated both in Fe and in Ti crucibles; the results obtained in Fe crucibles were significantly different from those obtained in Ti crucibles. The stabilizing effect of Ti was used for the development of a method for the electrolytic production of Ti; lower chlorides of Ti in a molten alkali metal chloride melt are electrolyzed, the melt composition being maintained constant by reduction of  $\text{TiCl}_4$  with metallic Ti. The electrode processes consist of discharge of  $\text{Cl}^-$  and  $\text{Ti}^{2+}$  or  $\text{Ti}^{3+}$  ions; in the first case, 1 of each 2 g-atoms of obtained Ti, and in the second case, 1 in every 4 g-atoms, is returned to the cycle. In either case, four Faradays of electricity and one mole of  $\text{TiCl}_4$ , as also during the electrolysis of  $\text{TiCl}_4$ , are consumed in the production of one g-atom of non-recycled Ti. During the electrolysis

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Special features ...

S/026/62/000/000/006/007  
D408/D307

the  $\text{TiCl}_2$  content of the melt remained approximately constant, whereas the  $\text{TiCl}_3$  content decreased continuously; this was due to the presence of the metallic phase in the catholyte, enabling the reaction  $\text{Ti} + 2\text{TiCl}_3 \rightarrow 3\text{TiCl}_2$  to proceed. The cathodic deposit consisted of an inner bright spongy layer, almost free from salts, of relatively coarse particles which adhered together comparatively strongly, and of an external dark grey spongy layer, impregnated with salts, which crumbled into fine powder when the salts were washed away. There are 5 figures and 3 tables.

ASSOCIATION: Institut metallurgii AN SSSR (Institute of Metallurgy AS USSR)

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Card 3/3

KOCHKIN, V. P.; CHIZHIKOV, D. M.; RUMYANTSEV, Yu. V.

Chemical reactions between sulfates and sulfides of zinc and cadmium. Trudy Vost. Sib. fil. AN SSSR no.41:100-107 '62.  
(MIRA 15:10)

1. Vostochno-Sibirskiy filial Sibirskogo otdeleniya AN SSSR.

(Zinc—Metallurgy) (Cadmium—Metallurgy)  
(Chemistry, Metallurgy)

CHIZHIKOV, D.M. (Moskva); KORSUNSKAYA, V.N. (Moskva)

Chlorination of titanium-bearing materials. Izv. AN SSSR. Otd. tekhn.  
nauk. Ser. i. ~~Engl. Ser. 8-0~~ (MIRA 15:10)  
(Titanium compounds) (Chlorination)

KOCHKIN, C. P.; CHIZHIKOV, D. M.

Behavior of cadmium during the roasting of zinc concentrates.  
Trudy Vost. Sib. fil. AN SSSR no.41:108-113 '62.  
(MIRA 15:10)

1. Vostochno-Sibirskiy filial Sibirskogo otdeleniya AN SSSR.

(Zinc—Metallurgy)  
(Cadmium—Metallurgy)

CHIZHIKOV, D.M. (Moskva)

Ways of improving the metallurgy of heavy nonferrous metals. Izv.  
AN SSSR. Otd. tekhn. nauk. Met. i gor. delo no.3:13-27 My-Je '63.  
(MIRA 16:7)

(Nonferrous metals--Metallurgy)  
(Oxygen--Industrial applications)

CHIZHIKOV, D.M. (Moskva); KITLER, I.N. (Moskva); SHARKOV, A.I. (Moskva)

Reduction of sodium ferrite by solid carbon. Izv. AN SSSR. Otd.  
tekh. nauk. Met. i gor. delo no.3:83-88 My-Je '63. (MIRA 16:7)  
(Sodium ferrate) (Oxidation-reduction reaction)

TRUSOVA, V.G.; ~~CHIZHIKOV, D.M.~~

Simultaneous electrochemical deposition of cadmium and tellurium  
from aqueous solutions of salts. Trudy Inst. met. no. 12:49-58  
'63. (MIRA 16:6)

(Cadmium—Electrometallurgy)  
(Tellurium—Electrometallurgy)

CHIZHIKOV, D.M.; KITLER, I.N.; LAINER, Yu.A.

Crystallisation of aluminates from solutions with a high  
caustic relation. Trudy Inst. met. no.12:59-65 '63.

(MIRA 16:6)

(Aluminates) (Crystallisation)

CHIZHIKOV, D.M.; KITLER, I.V.; KARYAZINA, I.N.

Kinetics of dissociation and reduction of sodium ferrite.  
Trudy Inst. met. no.12:66-71 '63. (MIRA 16:6)

(Sodium ferrate)

CHIZHIKOV, D.M.; KONYSHKOVA, T.Ye.

System lead oxide -- iron oxide. Trudy Inst. met. no.12:72-78  
'63. (MIRA 16:6)

(Systems(Chemistry))

CHIZHIKOV, D.M.; KHIRIK, A.S.[deceased]

Determining thermophysical properties of oxygen and sulfur  
compounds of zinc and copper. Trudy Inst. met. no.12:79-84  
'63. (MIRA 16:6)

(Zinc compounds—Thermal properties)  
(Copper compounds—Thermal properties)

CHIZHIKOV, D.M.; VOLKOVA, M.Ye.; TSVETKOV, Yu.W.

Determination of tin monoxide activity ~~in~~ melts of the  $\text{SnO-SiO}_2$  systems using the electromotive force method. Dokl. AN SSSR 150 no.2:353-355 My '63. (MIRA 16:5)

1. Institut metallurgii im. A.A.Baykova. 2. Chlen-korrespondent AN SSSR (for Chizhikov).  
(Tin oxides) (Electromotive force)

CHIZHIKOV, D.M. (Moskva); GOLYANITSKAYA, Z.F. (Moskva); YEREMENKO, I.N.  
(Moskva)

Interaction between copper and iron sulfides and fused iron-  
calcium silicates. Izv. AN SSSR Met. i gor. delo no.2:41-44  
Mr-Ap'64 (MIRA 17:8)

MAKSIMENKO, G.U.; CHIZHIKOV, G.I.

Precision casting of brass blades. 14t.proizv. no.2:39-40 F  
'60. (MIRA 13:5)  
(Brass founding)

CHIZHIKOV, G.I.

Changing the design of the DMK furnaces. Lit. proizv. no.6:  
36 Je '64. (MIRA 18:5)

CHIZHIKOV, I. M.										1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
S										PROCESSES AND PROPERTIES INDEX										18									
<p>No. 395 (Russian). I. M. Chizhikov: "Evaluation of the Plasticity of Metals and Alloys as Regards Conditions of Hot Shaping by Pressure." (<i>Zavodskaya Laboratoriya</i>, 1949, vol. 15, Feb., pp. 191-199).</p>																													
<p>ASB-51A METALLURGICAL LITERATURE CLASSIFICATION</p>																													
<p>194903 HIR ONE ONE</p>										<p>194903 HIR ONE ONE</p>										<p>194903 HIR ONE ONE</p>									
<p>194903 HIR ONE ONE</p>										<p>194903 HIR ONE ONE</p>										<p>194903 HIR ONE ONE</p>									

[illegible]

GHIZHKOV, M.S. (Leningrad)

Dynamic observation of noninfected adults and the detection of  
incipient tuberculosis [with summary in French]. Probl.tub. 35  
no.2:11-14 '57. (MLA 10:6)

(TUBERCULOSIS, physiol.  
primary infect. in adults. dynamics (Rus))

CHIZHIKOV, M.S. (Leningrad)

Determination of the most effective methods of immunization against tuberculosis with BCG vaccination under experimental conditions.

Probl. tub. 36 no.6:87-90 '58

(MIRA 11:10)

(BCG VACCINATION, exper.)

determ. of most effective methods in animals (Rus))

✓ 2057. RIGS FOR TURBINE DRILLING OF BOREHOLES FOR FREEZING OPERATIONS (IN  
SHAFT SINKING). Chizhikov, N.I. and Vladimirov, R.D. (Ugol (Coal, Moscow),  
Oct. 1955, 19-24). (L).

①

CHIZHIKOV, NIKOLAY I.

POLYAKOV, Nikolay Mikhaylovich; CHIZHIKOV, Nikolay I.; FADEYEV, Ye.I.,  
otvetstvennyy redaktor; SAVIN, M.M., redaktor izdatel'stva; BEKKER,  
O.G., tekhnicheskiy redaktor

[Use of rock freezing in mining] Provedenie gornyykh vyrabotok s  
primeneniem zamorazhivaniya porod. Moskva, Ugletekhizdat, 1957.  
238 n. (MLRA 10:10)

(Coal mines and mining)

(Refrigeration and refrigerating machinery)

CHIZHIKOV, N.I., inzhener.

Lowering the cost of artificial freezing of rocks. Shakht.  
stroi. no.4:16-17 Ap '57. (MIRA 10:7)  
(Frozen ground) (Shaft sinking--Costs)

*CHIZHIKOV, N.I.*  
CHIZHIKOV, N.I., inzh.

New sluice box for mine building. Shakht.stroi. no.10:20-21 0 '57.  
(MIRA 10:12)  
(Hydraulic mining--Equipment and supplies)

CHIZHIKOV, Nikolay Ivanovich; BOBORYKIN, Ye.P., otv.red.; SHUBOVA,  
L.B., red.

[New ShASh-1 sluice for shaft sinking with compressed air]  
Novyi shliuzovoi apparat ShASh-1 dlia prokhodki shakhtnykh  
stvolov pod szhatym vozdukhom. Moskva, TSentr.biuro tekhn.  
informatsii, 1959. 29 p. (MIRA 14:6)  
(Shaft sinking) (Sluices)

POLYAKOV, Nikolay Mikhaylovich; GHIZNIKOV, Nikolay Ivanovich;  
FADEYEV, Ye.I., otv. red.; SHMELEV, A.I., red. izd-va;  
PROZOROVSKAYA, V.L., tekhn. red.; SHELYAR, S.Ya., tekhn.  
red.

[Special methods in mining] Provedenie gornykh vyrabotok spetsial'nymi sposobami. Moskva, Gosgortekhzdat, 1962. 373 p.  
(MIRA 15:10)

(Mining engineering)

CHIZHIKOV, P. V.

USSR/Medicine - Veterinary, Jul 53  
Foot-and-Mouth Disease

"The Susceptibility of Horses to Foot-and-Mouth  
Disease," N.V. Chizhikov, Veterinarian

Veterinariya, Vol 30, No 7, p 53

In October 1952, during an epizootic of the foot-  
and-mouth disease among cattle on an unidenti-  
fied kolhoz in the USSR, 12 horses stabled in  
the same building with the diseased cattle con-  
tacted the disease.

273T64

3(0)

AUTHORS: Gorlova, R. N., Sukachev, V. N., SOV/20-123-5-44/50  
Academician, ~~Chizhikov~~, N. V.

TITLE: New Data on the Flora of the Neopleistocene (Novyye dannyye k flore neopleystotsena)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 5, pp 929 - 932 (USSR)

ABSTRACT: In 1956, N. V. Chizhikov discovered interglacial deposits on the Sara River not far from the village of Levina Gora (Rostov Yaroslavskiy district). Strata from 5 horizons are seen on the left bank of the river, which strongly undercuts the bank. The interglacial lenses form the fourth horizon and are up to 4 m thick. They overlies sand containing numerous pebbles and are overlain by fluvioglacial sediments (4-5 m). The lenses consist of 2 beds (from the top): 1) Well cemented, blue-gray clay, and 2) underneath sapropelic peat. The authors reconstruct the formation of the strata seen here in the following manner: Lacustrine-like waters existed in a depression of sandy, fluvioglacial sediments of the so-called Moskovskiy glacier; sapropel was deposited in this depression

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New Data on the Flora of the Neopleistocene

SOV/20-123-5-44/50

for a rather long period. As a consequence of the filling up of the lake by reeds and rushes, it gradually became a hypnum swamp. In the course of it's drying up, the swamp became overgrown with woody plants. Later this vegetation disappeared, and the region was eroded by streams from the next, still distant glacier ( the so-called Valdayskiy, Ref 4, or Kalininskiy, Ref 1) and covered by clayey sediments. When the glacier moved nearer to this region, the streams began to deposit fluvioglacial sediments, which were then covered by the moraines of the glacier. Through the combined effects of these waters, the glacier, and the later landslides, the sapropel and peat sediments were considerably deformed, and here and there mixed with clay and pebbles. In addition to the pollen and spore material (Figs 1,2), which made the above reconstruction possible, pine cones (*Picea excelsa* Link.) were found in the upper part of these sediments (Figs 3,4). After a detailed description of the succession of plants, especially tree species, the authors conclude that at the time of the Riss-Würm interglacial period (often called Mikulinskoye time in the USSR, Ref 1), not only a morphological separation existed between the European pines (*Picea excelsa*) and the

Card 2/3

New Data on the Flora of the Neopleistocene

SOV/20-123-5-44/50

Siberian pines (*Picea obovata* Ldb.), but also geographical and ecological differences. Their method of migration was basically different at this time. The recent overlapping of their areas of distribution is a relatively young event. On the basis of the discovery of dwarf birch remains (*Betula nana*) and their earlier discovery together with *Brasenia schreberi* Gmel., which prefers warm climates, the authors caution against hasty conclusions from such mutual occurrences. The distribution and mixing by glaciers and glacial waters could have been very strong. There are 4 figures and 6 references, 5 of which are Soviet.

ASSOCIATION: Institut lesa Akademii nauk SSSR (Forestry Institute of the Academy of Sciences, USSR)

SUBMITTED: September 8, 1958

Card 3/3

SUKACHEV, V.N.; GORLOVA, R.N.; METEL'TSEVA, Ye.P.; NEDOSEYeva, A.K.;  
CHIZHIKOV, N.V. [deceased]

New data on the interglacial flora in the central part of the  
Russian Plain. Biol.MOIF.Otd.biol. 70 no.1:55-84, Ja-F '65.  
(MIRA 18:6)

Chizhikov, O.M.

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FD-1209

USSR/Geophysics - Soil study of kolkhozes

Card 1/1 Pub. 129-12/19

Author : Chizhikov, P. N.

Title : ~~Pedological (soil) investigation in the kolkhozes of Khimkinskiy Rayon, Moskovskaya Oblast~~  
Pedological (soil) investigation in the kolkhozes of Khimkinskiy Rayon, Moskovskaya Oblast

Periodical : Vest. Mos. un., Ser. fizikom. i yest. nauk, 9, No 5, 117-126  
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Abstract : A study of the physical properties of certain turf-podzo (medium and weak) soils according to the N. A. Kachinskiy method (e.g. depth of sample versus hygroscopic water percentage, acidity, and number of particles per mm depth of various sizes of particles) by the author with the participation of student pedologists of Moscow University, agronomist M. V. Solov'yev, and pedologist A. P. Mzhel'skaya. At the conclusion of the study, each kolkhoz was presented a so-called cartogram showing recommended utilization of land, with brief explanation. An example of such a cartogram is given for the kolkhoz "Zarya Kommunizma" near village of Matushkino.

Institution : Chair of Pedology (Soil Science), Museum of Earth Lore

Submitted : February 16, 1954

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